

CLAIMS

1. An objective lens driving apparatus characterized by comprising:
  - an objective lens;
  - a lens holder for holding said objective lens;
  - a focusing coil having a central axis substantially parallel to a focusing direction of said objective lens;
  - a tracking coil having a central axis substantially parallel to a tracking direction of said objective lens;
  - a magnet for generating a magnetic field in the vicinity of said focusing coil and said tracking coil;
  - a support printed board which protrudes from side surface of said lens holder and has a restraining part for restraining end of winding of at least either said focusing coil or said tracking coil; and
  - a plurality of suspension wires made of conductive material,  
wherein said lens holder has a reinforcing rib which contacts at least partially with a protruded part of said support printed board from said lens holder.

2. An objective lens driving apparatus described in Claim 1, characterized by that a surface of

said reinforcing rib which is not in contact with a side surface of said lens holder forms an inclined plane with respect to said side surface of said lens holder and winding of said coil which is restrained at said coil restraining part is located along said inclined plane.

3. An objective lens driving apparatus described in Claim 1, characterized by that winding of said coil is restrained at said restraining part by winding a turn or few turns around said support printed board and said reinforcing rib.

4. An objective lens driving apparatus described in Claim 1 or Claim 3, characterized by that said reinforcing rib part has a stepped portion or a grooved portion and winding of said coil which is restrained at said restraining part is located along said stepped portion or said grooved portion.

5. An objective lens driving apparatus described in any of Claim 1 to Claim 3, characterized by that said support printed board has a plurality of notches and winding of said coil which is restrained at said restraining part is located along said notches.

6. An objective lens driving apparatus

comprising:

an objective lens;

a lens holder for holding said objective lens;

a focusing coil having a central axis

substantially parallel to a focusing direction of said  
objective lens;

a tracking coil having a central axis

substantially parallel to a tracking direction of said  
objective lens;

a magnet for generating a magnetic field in the  
vicinity of said focusing coil and said tracking coil;

a support printed board which protrudes from  
side surfaces of said lens holder and has a restraining  
part for restraining end of winding of at least either said  
focusing coil or said tracking coil;

a plurality of suspension wires made of  
conductive material; and

adhesive for reinforcement which is applied to  
a corner part defined by a protruded part of said support  
printed board from said lens holder and a side surface of  
said lens holder.

7. An objective lens driving apparatus  
described in Claim 6, characterized by that said lens  
holder has a pasted part with said support printed board,  
said pasted part comprising a first depression

as an adhesive reservoir and a groove which extends from said first depression to a base of said support printed board.

8. An objective lens driving apparatus described in Claim 6, characterized by that said lens holder comprises a second depression as an adhesive reservoir, a groove which extends from said second depression to said objective lens and a groove which extends from said second depression to a base of said support printed board.

9. A manufacturing method of the objective lens driving apparatus described in Claim 6 comprising steps of:

dropping adhesive into said first depression formed on said lens holder;

fixing firmly said support printed board by pushing said support printed board against said first depression, as well as overflowing said adhesive to said corner part by extending said adhesive along said groove of said lens holder which extends from said first depression to said corner part.

10. A manufacturing method of the objective lens driving apparatus described in Claim 6 comprising

steps of:

dropping adhesive into said second depression formed on said lens holder;

fixing firmly said objective lens by pushing a member against said second depression, as well as overflowing said adhesive to said corner part by extending said adhesive along said groove of said lens holder which extends from said second depression to said corner part.

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